Standard Operating Procedure for Downloading GrabCad + Testing Estimations:

1. Go to https://grabcad.com/print
   a. In top right corner, select **"Sign up for Free"**
   b. You will see the following show up on your screen; fill in the information, and select **"Engineer"** for Role, **"University of Delaware"** for "Company Name", **"Other"** for "Industry Vertical", **"5,000-10,000"** for "Company Size", and **"Education/Research"** for "What do you use your 3D printer for?"
      i. Note: These entries don't really matter, but it is required that you fill them in.



   c. Click **"Sign Up"**
   d. Check your email to confirm your account, and then **Login**!
2. Once logged in, click **"Download GrabCad Print"**



   a. Once downloaded, open GrabCad Print, select your language, and accept the Terms and Conditions.

b.  Click **"Install"** and allow the app to make changes to your device
c.  Once installed, click **"Launch"** and login with your new account information.
d.  You will see a menu in the bottom right corner that says **"Select a Printer"** - in that menu, go under **"Printer Templates (FDM)"** and scroll down until you see **"Stratasys F170"** - click on it
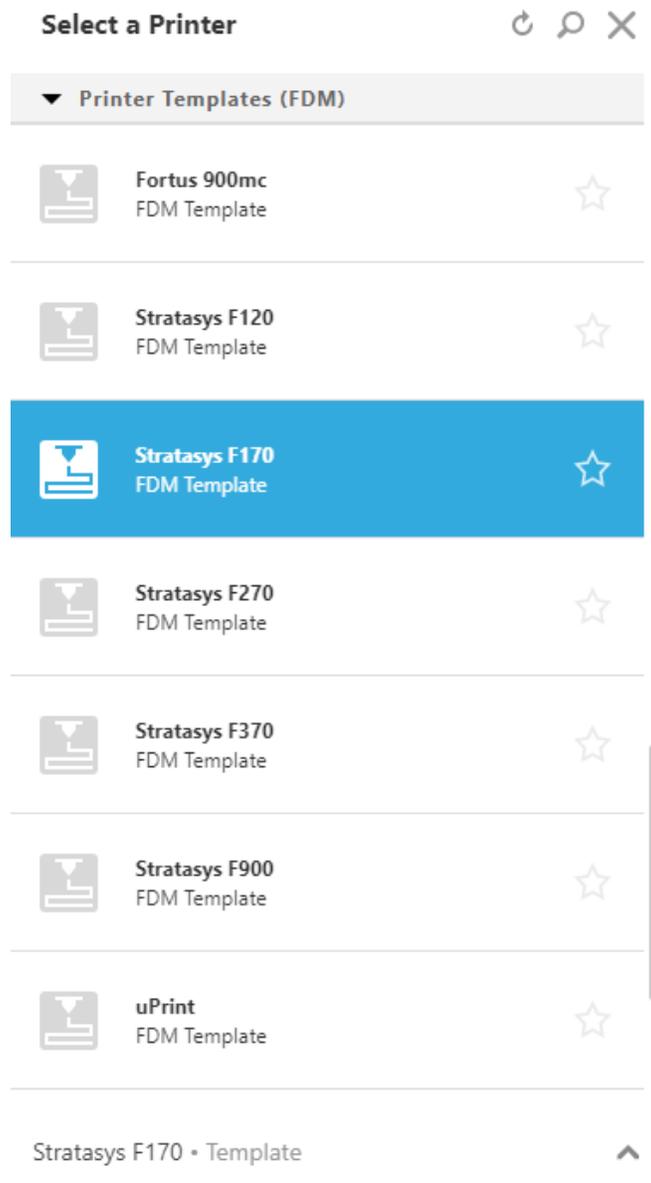
e. You will see the following on the left hand side of the GrabCad screen. Under 'New Project', select **"Add Models"**
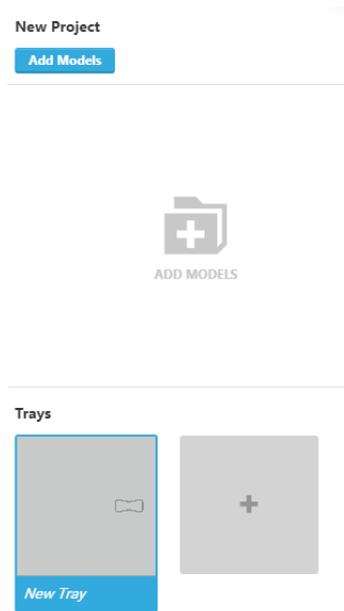


f. After you have selected your part from your computer files, you will see it pop up on the tray of your 'printer' like so (this is a test part):
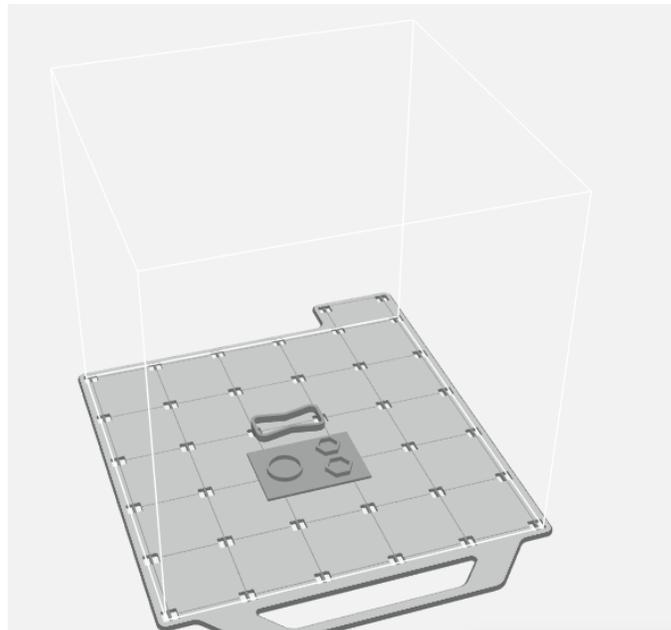
g. On the right hand side, you will see a menu that looks like this:

This is the part view!

This is analysis mode; don't worry about it!

This is a Slice Preview; it allows you to see how your part will be layered together!

This is the Model Info - it allows you to make sure your units are correct!

These are the tray settings - don't worry about them, they just tell you what kind of material we use!

Infill Style

For Model Settings, just choose "Sparse" for Infill

These are the Support Settings, don't worry about them!

Selecting "Arrange this Tray" will allow the program to automatically move the pieces to their optimal place, but you can move them around on your own!

For "Orient", if your part is standing up sideways, select the face you want to be flat on the tray and select "Orient Face to Plane" - this decreases material usage!

This is for Scaling; don't worry about that!

These are Manufacturing Notes; don't worry about them!

h. Fab Lab TAs will orient parts so the least support material is needed. The only exception to this is that concentric parts are oriented so circles are parallel to the base tray, in order to preserve precision. Try to orient your part in an optimal position to get an accurate estimate.

i. Once all of these options are selected, you may now click **"Estimate"** at the bottom right. This will tell you how much material your print will use, and how long the print will take!

| Tray Estimations | | ✕ |
|---|---|---|
| Fidget Spinner 0.005 Template | Print Time | 24m |
| | Model Material (in³) | 0.579 |
| | Support Material (in³) | 0.329 |